Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

Title V Draft No. V-00-026
IMCO RECYCLING, INC.
MORGANTOWN, KENTUCKY
July 3, 2000
SEAN ALTERI, REVIEWER
Plant I.D. # 21-031-00033
Application Log # G176

SOURCE DESCRIPTION:
IMCO Recycling, Inc. owns and operates a secondary aluminum production plant, a salt cake processing facility, and a proprietary residual landfill for disposal of salt cake on a 451-acre tract of land located approximately one mile west of Morgantown, Kentucky. The raw materials processed at IMCO's Morgantown facility consist of various types of scrap aluminum, including both coated and uncoated aluminum coil, dross from primary aluminum production, used beverage cans (UBCs), scrap siding, and miscellaneous aluminum scrap types. IMCO Recycling, Inc. is subject to the requirements set forth in the MACT (Maximum available control technology) standard for the secondary aluminum industry, 40 CFR Part 63, Subpart RRR. All affected sources and emission units are existing except for a reverberatory furnace which has not been constructed. The reverberatory furnace shall comply with Subpart RRR upon startup. All existing facilities shall comply with current requirements until compliance with Subpart RRR is required.

The UBCs, coated aluminum scrap, and miscellaneous scrap require processing, shredding and delacquering, prior to being charged to the rotary or reverberatory furnaces. UBCs are the primary feedstock for the reverberatory furnaces. The UBCs are usually received in bales and are stored in the concrete storage yard. The bales are transported to the shredder by forklift. The UBC bales are processed by the shredder, and the shreds are transported to the delacquer furnace by an overhead conveyor. The delacquering furnace burns and removes the paint on the shreds that are then fed directly to the reverberatory furnaces. Coated scrap aluminum siding is processed in the same manner.

IMCO Recycling utilizes six rotary furnaces to melt aluminum scrap in a batch process. After charging, the scrap is covered with a salt flux (NaCl or KCl) to reduce oxidation and a small quantity (<2%) of cryolite (NaAlF) is added to improve coalescence of molten metal. The rotary furnaces are paired and exhaust gases are ducted to pass through one of three five-module lime-injected baghouses where the fine particles are removed and gases are neutralized. Particulates are collected for offsite disposal. Furnace baghouses are equipped with primary and secondary air exchangers for reducing the flue gas temperature at the baghouse to less than 250^{o}F. Particle removal efficiency of the furnace baghouses is 97%. IMCO has installed five-module baghouses on the rotary furnaces in order to allow individual modules to be removed from service for maintenance without unacceptably reducing baghouse performance.

IMCO Recycling, Inc. also uses reverberatory furnaces to continuously melt aluminum scrap. One furnace is existing and another is permitted to be constructed. The furnace to be constructed will be required to comply with Subpart RRR upon startup. From the reverberatory furnace, the molten

aluminum is either poured into molds and allowed to cool to form ingots or tapped into crucibles mounted on flatbed trailers for molten delivery to customers. The crucibles are pre-heated with crucible heaters rated at 2.1 MMBTU/hr.

The salt cake (spent flux and oxides) is periodically removed from furnaces and transported to the Mud Building, where it is allowed to cool. After cooling the salt cake is loaded into trucks and hauled to the salt cake processing facility to recover additional particulate aluminum which is returned to the furnaces for re-processing.

IMCO received a construction permit for the salt cake processing facility in 1995. This facility was constructed and in operation by late 1995. This plant processes salt cake generated at Morgantown, as well as salt cake generated by other IMCO facilities. The salt cake processing facility has the capability of processing 300,000 tons of salt cake annually. The recovered aluminum is returned to the furnaces for reprocessing.

IMCO owns and operates a permitted residual landfill for the disposal of salt cake generated by the salt cake processing facility. This landfill generates fugitive ammonia and particulate emissions. The ammonia emissions result from the hydration of the salt cake. Once wet, the salt cake generates an estimated 130 tons per year of ammonia fugitive emissions from the landfill. All tests performed by the Division have demonstrated compliance at the property line.

Other emission sources at IMCO's Morgantown facility include the crucible cleaning station, transporting aluminum to the storage bins and storage yard, haul roads, and the salt cake cooling area.

COMMENTS:
The rotary furnaces at the Morgantown facility are paired and exhausted to a five-module lime-injected baghouse. IMCO has previously stack tested the baghouses to determine the necessary lime injection rate to control HCl emissions within the emission limitations set forth by 40 CFR Part 63, Subpart RRR. The baghouse has a control efficiency of 97% for particulate matter. HCl removal efficiency will be determined after the compliance stack test. IMCO may choose to comply with the 90% removal efficiency of HCl requirement option listed in the 40 CFR Part 63, Subpart RRR MACT standard.

A lime-injected baghouse is also utilized to control the emissions from the reverberatory furnaces and delacquering furnace. The baghouse has a control efficiency of 97% for particulate matter.

The crucible cleaning station is equipped with a baghouse to control the particulate matter. The baghouse has a control efficiency of 97% for particulate matter. The shredder is also equipped with a baghouse, which is 97% control efficient for the removal of particulate matter. The salt cake building is equipped with a baghouse.

CREDIBLE EVIDENCE:
This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.